

"Tune"

OUR VERY BEST PEOPLE

By EDNA FERBER

An "Ugly Duckling" of Today



"Cartoon"

IF RUTGER G. TUNE had waited two weeks longer to die he would have had to do a lot of explaining. And he had always hated explanations.

A plump, high-colored, well dressed figure of a middle-aged man, he had just passed debonairly through the gates of the Kansas City Union station on his way to take the eastbound train, a deferential dusky porter ahead of him, when suddenly he crumpled, sank and became a mere heap of haberdashery on the station platform. Confusion, crowds, telegrams. And the Tune twins, already motherless, were summoned home from their commencement exercises at Vassar to find themselves pretty much in the position of the two orphans of drama fame, so far as finances and future were concerned.

One week after the funeral: "But what did he do with it?" demanded Hilda Tune, the beauty. Her tone was perhaps excusably querulous, considering that she and her sister Hannah now found themselves possessed of exactly $920 each, the lawyers having just finished explaining.

"He didn't have it," replied Hannah, the plain twin, composedly.

"Didn't have it! What nonsense, Hannah. What did we live on all these years? Our education and clothes, and this huge house, and father's wine and food and horses, and——" Her voice trailed off. Then again, in helpless wrath: "What did we live on?"

"Bluff," said Hannah.

"But mother left heaps. And there was all that stock in the packing company."

"Yes, but father squandered heaps. The stock must have gone years ago."

"But it was ours! Lots of it was ours! Yours and mine."

Hannah smiled grimly. "You must have understood something of what Mr. Patterson and the other lawyer meant when they said that father had been unwise in his handling of the money. He gambled, among other things. Well, if we've learned anything practical at school, Hilda my gal, now's a grand chance to prove it."

* * * *

HANNAH resembled her simple, straightforward, plain-featured mother, who had been the Kansas City heiress of the stock yards stock. Hilda was undeniably her father's daughter—authentic offspring of Rutger G. Tune of the Massachusetts Tunes.

The girls had been sent to eastern schools in their early teens. Also, when the Tunes traveled it was always in the east or in Europe. They knew practically nothing of the vast country that stretched fo rthousands of miles west of Missouri to the Pacific. Mrs. Tune had loved her middle west and she had, during her lifetime and even after, shrewdly made it financially difficult for her husband to remain long away from the city whence her income had its source. The twins had once been taken to Colorado Springs. Western railroad society was largely represented at the Antlers Hotel. Rutger G. Tune had not liked it.

"A lot of brakemen," he said, "who have worked their way up through promotion to superintendencies, and their wives, who have been waitresses, probably, in the Harvey station eating houses."

Mrs. Tune had spoken up at this. "My father used to say that those western railroad brakemen and Harvey lunchroom waitresses were the future aristocracy of the west. Fine stock, he used to say, for foundation material. 'Pick out,' he said, 'almost any well dressed, intelligent, prosperous looking woman who was the wife of a successful ranch owner, railroad official, mining or oil man living within one thousand miles of the Mojave Desert, and ask her if she was born in the west. She'd answer: "Oh, no! I'm from Iowa"—or maybe Wisconsin, or Michigan, or Kansas, or even Ohio—"I used to be a Harvey girl." Pa said they were a fine lot, those Harvey waitresses. Pioneer stuff, pa said."

"Well," interrupted Rutger G. Tune, "I prefer my hired girls in the kitchen, not in the parlor."

At school the twins, Hilda and Hannah, had been known, respectively, as Tune and Cartoon. For nature, having fashioned these two in like mold, yet had so slightly, so deftly, so fiendishly overemphasized in Hannah that which was perfection in Hilda that perfection became grotesquery. Still Hannah might have been considered an average-looking girl, which she really was—healthy, high-spirited, wholesome. For that matter, there were those who might have thought Hilda's lips a shade too thin, just as others thought Hannah's mouth too large.

That generous mouth of Hannah Tune's was the index to her character. It explained why she could be honestly proud and pleased when people exclaimed about her sister's loveliness.

* * * *

IT had been June when Rutger G. Tune had caused the little flurry in the Union station and the great upheaval in the lives of his motherless twin daughters. In July the twins were to leave the big Tune house perched high on the hill that commanded such a sweeping and unobstructed Missouri view of nothing in particular.

"Father had it built up here," Hannah observed without bitterness, "not because anything could be seen here from the top of the hill, but because everybody could see the house from the bottom of it. That's what our life has been, really, in the last ten years. A magnificent view of nothing at all."

The two had soberly been discussing that baffling problem known as ways and means.

"There's only one thing to do, of course," Hilda said, "that is, to get away from here. And there's only one place to go, and that's east. Our friends there know father's dead, but they don't know how completely smashed we are. I shan't tell them until I have to. We both have enough invitations to last us through the summer if we manage properly. The Allisters at Bar Harbor in July, and Isabel Kane's the first two weeks in August in the Adirondacks; and we might even manage Newport if we went about it properly and used a little——"

"And then what?" interrupted Hannah bluntly.

"I don't know. But at any rate we'd have made a move in the right direction. Our friends in the east are numbered among our very best people. Those are the contracts we'll have to keep up."

"On $920 per lifetime?"

"Yes. Why not? Until something turns up. And it will, with those people back of us. There's something picturesque about being twins. It's considered chic. And orphan twins, too."

"And penniless orphan twins makes it quite perfect, I suppose."

"All right, then. Suppose you suggest something better."

Hannah, for the moment, looked as nearly helpless as Hannah could, being handicapped by her height, her serenity of brow and her aura of superb health. "I honestly haven't anything better to suggest, Hilda. I only know I can't go east with you and live on our very best people and be a chic twin."

"What are you going to do, then? What are you going to do? Stay here in Kansas City? Patronized by these people? What'll you live on? Really, Hannah, sometimes I think you're utterly——"

"I could teach school."

"Teach school!" Hilda echoed weakly. "You mean a girls' school somewhere in the east?"

"I mean a school here somewhere in Kansas or Missouri, maybe. A country school. It doesn't pay much, but it's a living, for the present at least. A country school—and a horse to ride, perhaps, Saturdays and Sundays. I'd like it."

"Hannah Tune, you must be crazy! A country school! A horse on Saturday!"

"And Sunday," put in Hannah. Suddenly she became tremendously serious. Her fine brow bore down upon Hilda, silencing her. "Look here, Hilda Tune. There's no use pretending we're not in a mess. We are. But we always have been. We simply didn't know it, that's all. But father knew it and shut his eyes to it and pretended that something would turn up. Now, I'm sick of pretending. I'm the plain Tune twin, with $920 between me and whatever happens to you when your money's all gone. It's July, and pretty late, but I'm going to try to get a school job by September somewhere."

A sort of glaze crepe over Hilda's beautiful face, hardening it. "All right, then. Be a schoolma-am. But don't expect me to stay here with you. Sometimes, Hannah, I think there isn't a drop of Tune blood in you."

Hannah seemed to consider this a compliment. "I know it. After all these years of pruning and snipping, here I am, just bristling all over with Kansas. I guess there's no help for it."

* * * *

HILDA, looking lovely and fragile in black, went to the Allisters at Bar Harbor. At the last minute Hannah had stuffed $500 of her own $920 into Hilda's bag. "I won't need it," she said, above Hilda's faint protests. "I'll be earning money soon. And you'll want it pretty badly if you're going to make any kind of showing in the among-those-present column in the Newport society news. Linsey-woolsey, whatever that is, will be all I'll need."

By the first of August Hannah was told the Eldorado, Kansas, school was hers. In the middle of August Hannah was notified that Eldorado's last year's teacher was returning after all, and that here was one month's salary, and it was hoped Miss Tune had been put to no inconvenience.

Miss Tune was not only inconvenienced but indignant and a little frightened. At this critical moment a telegram from Hilda—her father's daughter—said that she had a chance to go abroad in October with Mrs. Courtney Page as a sort of pet, pampered companion. And what did Hannah think about it? Hannah, feeling suddenly alone in the world and terribly twinless, answered: "It sounds heavenly. You must go." Then she began to read the want ad columns of the Kansas City Star.

M-m-m—clerks wanted. Experienced. Binders wanted. What was a binder? Hannah wondered. And what did they bind? Ladies to solicit orders for marvelous new patent contrivance warranted to revolutionize housework On commission only. Waitresses wanted—oh, my goodness! —what was there for her to do? Wait a minute! Waitresses wanted for Harvey hotel dining rooms and lunch rooms in Colorado, New Mexico, Arizona and California. Apply Employment Department, Union Station, Room 15.

Something came creeping back into Hannah's consciousness like the fragments of a tune once heard and long forgotten. "Fine stock—pioneer stuff —Harvey waitresses—future aristocracy——"

Hannah had been a very little girl when her mother, with that look of high pride and honest indignation, had delievered herself of that speech. But it came back to her now, as did the sneer on her father's face. Colorado — New Mexico — Arizona — California! Hannah took a long breath, exhaled it, and applied Employment Department, Union Station, Room 15.

* * * *

THERE were five other girls in the anteroom. One of them had a foreign look—Polish or Bohemian, Hannah thought. Two evidently friends, had entered together in flashy clothes exhaling strong, cheap perfume. A fourth was a pale, quiet girl who appeared listless and limp. "She's going out for her health," Hannah decided. The fifth girl resembled Hannah's Vassar chum from Galena, Ill. Hannah found herself smiling at this girl companionably. The girl smiled back at her. Encouraged thus, Hannah moved to a chair next to her.

"Are you—have you ever been—are you going out west as a Harvey girl?"

"Yes—to stay this time, I hope."

"Oh, you've been before?"

"Two years ago. But only for the summer. I'm a school teacher. I took a Harvey job two summers ago because I thought it would be fun, kind of, and a cheap way to see something of the west. I'm from Albia, Iowa. You ought to have heard my folks when I said I was going as a waitress. They didn't know."

"And now you are going to stay?"

"Long as I want to, anyway. I'm lucky. They're sending me to the Canyon." Then, as Hannah looked blank: "Oh, I guess you don't know about the different stations. You see, all the girls are crazy to go to the hotels at the Grand Canyon, or Albuquerque, or big places like that. We call them heaven. Now Needles, Calif., and Rincon, N. M., are purgatory. Needles is 200 miles from the Mojave desert in a sort of pocket. And hot! Phew! When it's a 125 there they think its getting on toward summer."

Hannah looked a little worried. "Do you think a new girl——"

The other shook her head emphatically. "Some. But not you." Her glance encompassed Hannah's face, her clothes, her manner. "Gracious no! You look like a Canyon girl, or Albuquerque, except that perhaps you'll lose out because you're too pretty."

Hannah stared, smiled. "Me!"

"You know, don't you, that Harvey's never hire girls that are awfully pretty. They found they could not keep them out west. They just melted away into marriage with some rancher or railroad man or mining ——"

"Then it's true!"

But the other girl misunderstood. "Oh, my, yes! They like to hire them neat, plain and sensible. They are very strict, you know. You've got to behave just so during hours—and after hours, for that matter. In before twelve——" She broke off suddenly as the door to the inner office opened. She was next in the list of waiting applicants. "See you later. Wish me luck!"—over her shoulder.

* * * *

HANNAH never saw her again. Two days later Hannah Tune, daughter of the late Rutger G. Tune of the Massachusetts Tunes, was on her way to San Querto, N. M., with a Harvey Santa Fe railroad pass in her handbag. She was enjoying herself immensely, though the ride was hot, dusty and seemingly endless.

With her Santa Fe pass was an identification card entitling her to meals free of charge at all stops where meals were regularly scheduled. At these stations along the way passengers were notified they would have half an hour for what was called "refreshments."

Her first meal in the dining room at Hutchinson, Kan., had been of immense interest to her, flavored with almost hysterical amusement. A hundred or even two hundred passengers were fed here in half an hour. The meal marched as inevitably, as irresistibly as death itself. Each table seated eight. The first course lay smoking before you as you seated yourself. With that scant half-hour snapping at their heels the passengers settled grimly, determinedly to this business of consuming their dollar's worth. It was a huge meal, hot, savory, appetizing. No sounds but the clink of cutlery against china, the low voices of the waitresses murmuring a chant of "Teacoffeemilk? Teacoffeemilk? Teacoffeemilk?"

Controlling, soothing this strange company, unconvivial, walked the Harvey hotel manager, bland, watchful, weaving in and out among the tables, hands behind his back. And as he walked he intoned "Pas-sengers on number nine have thirty minutes for dinner. Take—your—time!" Fifteen minutes later, again as before: "Pas-sen-gers on number nine still have fifteen minutes for dinner. Take—your time!" Gobble, gobble. Clink, clink. Munch, munch. Gulp, gulp. Soup, meat, vegetables, salad, olives, iced tea, dessert. "Pas-sen-gers on number nine still have five minutes——" They srept out like a horde of locusts leaving a devastated dining room.

Hannah decided she would eat in the lunchroom, where ham and eggs ordered one minute appeared miraculously before you the next; where hung the secret of coffee; where you sat perched on a revolving stool before a white slab of counter, with infinitesimal cream pitchers and little butter chips and glasses of ice water spinning and sliding all about you. Hannah became less and less a Tune; more and more the daughter of her plain, Democratic, high-spirited mother.

This trip had all the flavor of a stolen holiday, for the truth of it is that at the last moment she had lacked the courage to write to her twin, "I am going west to be a Harvey hired girl." Instead she had given Hilda to understand that her mission at San Querto was to teach school. Hannah had been in San Querto almost ten days before her twin's reply reached her.

"I suppose," wrote Hilda, among other things, "you'll be the pretty western school teacher of fiction and be rescued from Indians by a rancher in chaps and frijoles, and marry him and live happily ever after. Can you possibly spare me some money, Cartoon, dear?"

Hannah read the letter behind the counter at the San Querto station lunchroom. She had just emerged from the bewilderment, shock and chaos of the past ten days.

Now she read her letter in a quiet moment between trains. It had just been handed her by the hotel manager.

"Letter from home?" asked Louise, the red-haired girl who was on duty with her.

"From my twin sister."

"Twins! Don't say! Do you look just alike?"

"Oh, no!" Hannah said, rather absently, dipping into her letter again. "Not a bit. My sister's a beauty."

Louise looked at her sharply. "Well, you're no eyesore!" she exclaimed.

* * * *

BY the end of the month Hannah had learned to keep her head under a fire of orders volleyed at her like hail.

She learned that San Querto itself, though an important Santa Fe railroad division point, was an ugly little Mexican town, squatting flat on the mesa, its new houses staring and unlovely, its old town, where the Mexicans lived, squalid and unpicturesque. Yet there was the western mountain air, and there was the western sky, and there, beyond the town, were the Spanish peaks. They were, Hannah thought, like no other mountain peaks in the world. When first they had loomed up before her as she gazed out of her train window she had given a little cry and had sat forward in her seat, staring. There stretched the sage-green mesa, for miles. Not even a hillock. Then suddenly, rising out of this flat plateau and soaring straight up to snow loomed the twin purple Spanish peaks against the sunset sky. The tears had come to Hannah's eyes. She felt as if she had come home.

Now she learned to look at them the first thing in the morning; to peer into the darkness in their direction the last thing at night. She learned to wash and iron her own shirtwaists. She learned to ride a western horse on mountain roads.

And she learned to watch for the entrance of Dan Yard. Dan Yard was substitute brakeman on a branch line freight train running into San Querto four nights a week.

She had first seen him in the second week of her coming to San Querto. She was working nights that week. It was against rules for Harvey girls to carry on social conversation with lunch-counter patrons. A greeting, yes. An amiable word or two. That was all. Yet Hannah noticed a little intangible change come over the two girls on duty with her that night as Dan Yard swung open the screen door and, entering, threw one leg over a stool at the counter, pushed back his cap and grinned. "Any raspberries?" inquired Dan of the girl at whose station he was seated.

"Yes."

"Well, I don't want any."

"Thought you didn't." Having taken her part in this brilliant dialogue, she set before him a cup of smoking coffee and his plate of doughnuts. He took a great swallow of the scalding, revivifying liquid. The size of that gulp brought his head up and back so that he found himself staring at Hannah over the rim of his inverted cup. Hannah's gaze met his. Ting! went something like a bell inside her.

She saw a slim, hard, young Irishman of perhaps twenty four or five, his eyes were wide apart, clear and singularly bright. She thought she had never seen any one so wide awake at 2 a.m. Later Hannah learned that he was bow-legged and some three inches shorter than she. All their married life—for she married Dan Yard—she tried not to let him feel this difference in their height; for she loved him terribly and he was sensitive and somewhat vain, as all good Irishmen are.

What Dan Yard saw of Hannah over the rim of his cup she never quite knew. He would begin, when she asked him: "I said to myself: 'There she is!' like that. 'There's Mrs. Dan Yard.' I felt all the blood up in my head, fit to smother me."

"It was the hot coffee."

"It was the hot love," said Dan, being the reverse of mincing.

He had finished his coffee that night, had reached for his glass of ice water, swallowed it in one long draught and had walked out.

"Why!" said the girl who had waited on him. "Look! Dan Yard hardly touched his doughnuts at all."

* * * *

FOR six weeks Hannah withstood him. In those six weeks she learned much of Dan Yard. He came from a family of railroad workers. His father had been Engineman John Yard, killed in the wreck at Algodones, on the Santa Fe. Another uncle killed acting as yardmaster at La Junta. Two cousins were brakemen. Another a conductor. His family tree, and proud of it. He had almost gone through high school. Quit his third year because he had to go to work. By next January he would have his job as regular brakeman on the main line. Then they could be married.

"No!" said Hannah, trying to laugh. Then, "No," faintly, his eyes on hers and her own closing flutteringly as she felt his strong hand on her arm.

Hilda was in Europe. In January Hannah wrote her, fearfully yet boldly—and certainly baldly—"I am going to be married."

They had been married some weeks before Hilda's reply reached them. "I hope he's one of those millionaire ranchers or oil kings that seem to grow exclusively out there in the west."

The hot tears of resentment came to Hannah's eyes. She spent hard-earned dollars to cable her sister her answer, unthriftily worded: "He's a king, all right, but not the kind you mean. Dan's a brakeman on the Santa Fe railroad."

A cable from Hilda: "You must be insane. Cable if a joke."

Hannah replied tersely, "No joke."

Silence. Silence that lasted twenty years.

They went housekeeping in San Querto. Hanna busied herself in the little house with its mission furniture and its Navajo rugs, but while Dan was gone she found time heavy on her hands. She learned telegraphy and was a telegrapher at San Querto for two years, until her first child was born. They had two boys. Always there was with her that little fear ever present in the heart of the railroad worker's wife.

"Dan, I wish you'd stop railroading."

"Stop! What for?"

"I'm afraid you'll get k—hurt."

"Me! Naw! I won't get killed."

"They did."

"Not me."

She used to lie awake, always, on the nights when he was out on his run—wide awake, listening, until she heard the whistle of seven, Dan's train. They made him freight-train conductor one year later. Not so dangerous and better pay. A step up the ladder. By the time she had got accustomed to her duties as telegrapher in the little station at San Querto he was promoted to yardmaster at that point. Dangerous again.

The rise of Dan Yard is history in the annals of the Santa Fe road. From brakeman to freight-train conductor; conductor to yardmaster; yardmaster to station master at San Querto. Hannah with him all the time, toning down his roughness—"Tuning him down," she called it; saying quietly, "Now, Dan!" when he became too coltish. Just enough Tune in her to keep him impressed Plenty of her spirited mother to hold him.

At thirty he became an "office man"; clerk to the division superintendent at San Querto. At thirty-three he was division superintendent, with a private car, if you please.

From division superintendent he was promoted to district superintendent. From district superintendent to assistant general superintendent. Then, inevitably, general superintendent. There is, after that, only one step; but it is a momentous step, a seven-league stride. It is not only the chair at his right hand. It is the right hand.

Dan Yard at forty-six was general manager of the Santa Fe road. The Yards' private car now was a thing of rosewood and silken hangings and finest steel. They were royalty. Yet, if you happened to be a guest in this private movable palace of theirs and if, peering out of the window in the darkness, you asked: "Where are we now, I wonder? What's this place we're coming to?" Hannah Yard could close her eyes and, listening intently for a moment, open them to say: "We're just coming into Trinidad. I was here when Dan laid out these yards."

* * * *

DURING these twenty years Hannah had thought of Hilda thousands of times, and sadly. She took a New York paper as soon as they could afford it in the hope of seeing Hilda's name mentioned in the society columns, perhaps. She wrote her often. When she placed a return address on her letters they came back rubber-stamped, "Not at address given."

Though Dan's position took him frequently to New York, Hannah rarely accompanied him. Once she had tried to trace Hilda there, but had not succeeded. She thought of a detective agency, but shrank from the idea. After all, Hilda had not wanted her; Hilda had deserted her, ridiculed her. The two boys were at college, the elder at a school of engineering—"Like his pa," laughed Dan Yard; the other at agricultural school.

The Yard place, a great glowing creamy Spanish pile situated almost in the shadow of the purple and glowingly mysterious Spanish peaks, was known throughout the west. You were likely to find as guests there any one from the President of the United States to a flock of Harvey waitresses on a vacation. A sorolla over the fireplace in the living room; a gorgeous old vestment of brocade and velvet thrown over this screen bought in Granada.

"Come along to New York with me," said Dan Yard, in tousling mood. "Come on, old girl. Do you good. They sent me a catalog of that Spanish stuff to be sold at Barrios'. There's one old tapestry velvet that sounds like the thing you want for that balcony railing exactly. Come on. Let's take a look at it, anyway."

The general manager's private car, summoned casually, like an automobile. Thousands of miles over mountain passes, mesas, plains, prairies, corn fields. Omaha, Chicago, New York. "I wired Barrios," said Dan, at breakfast in New York, "and he just called up to say he was sending some stuff over here to the hotel."

A lean, wiry, pugnacious, bow-legged little Irishman, looking, in spite of graying hair and his carefully tailored suit and the dignity of his office, incredibly like the tough young brakeman of the San Querto lunchroom twenty years ago.

Like a cue in a play then the telephone rang. Barrios' representative calling. And "Oh, dear!" said Hannah, glancing down at a foamy but informal neglige, "you talk to him a minute, Dan. I'll do my hair and get into something. Don't let him sell you anything till I—remember that terrible table you——"

As she dressed hurriedly she could hear him in the adjoining room.

"Well, say, that's pretty—no, I don't like that one—I don't know, I just don't like it. It doesn't look Spanish to me. My wife knows. She'll be here in a minute. She's—she may like it—it don't look to me——"

A man's voice in low protest; then a woman's voice—high, hard, nervous, icy. "Not authentically Spanish! There are only two other pieces like it in the world. The other two were sold yesterday to a family representing our very best people. You will like it, I know, if you will just live with it awhile——"

Hannah, at her dressing table, stood up, clutching her dressing gown to her breast. She whirled to face her husband, who had just come it. He was grinning. He dropped his voice to a rasping whisper.

"Say, Hannah, there's three of 'em sent up with the stuff from Barrios'! A kid to carry the bundles and a young Spanish feller, and he's got on a lavender shirt and perfume, so help me! But listen. Don't get mad at me, Hannah, when you see her—the woman. Say, she looks enough like you, in a kind of awful way, to be a cartoon of you. A kind of snaky dress, and red stuff on her mouth, and talks about 'our best people, ——"

A sob of premonition shook Hannah Yard as she ran past her husband into the next room to face the woman sent up by Barrios.

(Copyright, 1924.)

HE FOUND HIMSELF STARING AT HANNAH OVER THE RIM OF HIS INVERTED CUP.

Moving a "Live" Rail.

AN unusual problem confronted an engineer for a northwestern railway system when he was required to move a large section of third or contact rail without interrupting traffic. The railway is a double-track line and the third rail for each track had not originally been laid between the tracks; but when some changes were made in the roadbed it became desirable to transfer about two thousand feet of the contact rail across the track so that both sets of third rails would be side by side and between the tracks.

A gang of seventeen men did the work. Each man was equipped with the ordinary large rubber gauntlets used in dangerous electric work, and wooden levers were employed for direct contact, a wooden tie nine feet in length being forced under the third rail every fifteen feet. The men were placed at intervals of ten feet and with their combined strength thus concentrated on a given section gradually forced over the great length of metal. The rails were wired at the ends with flexible insulated cable, which maintained the circuit. The work of making the transfer took thirty minutes.

Blowing Glass.

IN various factories window glass is being blown by machinery through the agency of compressed air. Into an iron ring which rests on an iron casting is poured a quantity of molten glass. The blowing head, which connects with an air pipe, is then attached to the ring. After the glass has been allowed to cool somewhat the blowing head and ring are lifted from the casting plate. The plastic glass sags through the ring in cup shape and is then blown into cylindrical form. When the cylinder has cooled its ends are cut off and it is slit lengthwise into a plane sheet of glass by means of heating and mechanical treatment.

The process has many advantages and has been found specially suited for the production of flat objects, large objects and wide-mouthed vessels, as, for instance, bath tubs, mill troughs, wash tubs and acid tanks. It can also be used in the production of crackled, marbled and other varieties of sheet glass of fancy design. The glass is said to be of remarkably good quality. Its thickness is uniform, its surface even and glassy and it is free from air bubbles. These factors are made possible by the method of mechanical blowing.

Direct From Heat.

TO obtain electricity direct from heat is a dream that is likely at some time to be realized. At present there are numerous methods of obtaining electricity direct from heat, but the power obtainable is very minute. However, a method has been devised which employs two insulated carbon rods heated in an electric furnace or oxy-acetylene flame, in a new way. The two carbons are kept separated at one end, but the other ends are connected through a current-measuring instrument. When one of the carbons is suddenly displaced a current of several amperes will flow. By displacing one of the carbons periodically an alternating current can be generated.

When a slight voltage is applied to the carbons the current increases to more than ten amperes at about 450 degrees Fahrenheit.

These experiments are interesting, inasmuch as such a result would hardly be expected at atmospheric pressure. The same thing has been noticed before on a much smaller scale, but in a high vacuum. Such seemingly insignificant discoveries often mark the beginning of wonderful developments.

Making Machines Pay.

THERE is in use an instrument known as a machine recorder which affords much information with respect to the operation of machinery in factories and in consequence is said greatly to reduce costs.

This recorder has electrical connections with every machine in the factory, each machine making an individual record of its performance upon a continuous strip of paper. The record strip is divided into minutes by horizontal lines, having indicating numbers at the left margin, each division of five being indicated by a heavy line and a figure.

When a machine is running on productive work a recording pen draws a continuos vertical line until the machine is stopped, the strip keeps moving, indicating time lost between jobs.

A schedule is kept of the time required for each operation in the plant and the recorder indicates whether the machine is being operated at its full speed or cut by the length of time consumed in the operation assigned to it. It will also show how much time the workman consumes in removing the finished work from the machine and replacing the new.